taining the originating processors. Alternatively, the system further includes another electronic mail system and the destination processor is within the another electronic mail system containing the originating processors.

A system for transmitting information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processor within an electronic mail system in accordance with the invention includes an RF information transmission network for transmitting stored information by RF transmission to at least one of the plurality of destination processors; at least one interface switch, an interface switch being coupled to the electronic mail system containing the plurality of originating processors and to the RF information transmission network and transmitting information received from the electronic mail system containing the plurality of originating processors to the RF information transmission network; at least one additional processor, an additional processor being coupled to the at least one interface switch and originating information from outside any electronic mail system for transmission to the at least one of the plurality of destination processors by the RF information transmission network and an address of at least one of the plurality of destination processors to receive information transmitted by the RF information transmission network or an identification number of a RF receiver receiving the information for transmission to one of the plurality of destination processors and transferring the information to one the plurality of destination processors; and wherein an interface switch receiving the information originating from one of the at least one additional processor adds information used by the RF information transmission network during transmission of the information to the RF receiver receiving the information. The destination processors may be transported during use.

The identification number of the RF receiver receiving the information is added to the information originated by the additional processor by the additional processor originating the information or by the additional processor matching an identification of the destination processor inputted to the additional processor with a stored identification of the destination processor and adds an identification number stored with the matched destination processor.

The identification number of the RF receiver receiving the information is added to the information originated by the additional processor by the interface switch receiving the information from the additional processor and may be added by the interface switch matching an identification of the destination processor inputted to the additional processor with a stored identification of a destination processor and adds an identification number stored with the matched destination processor.

The receiving switch stores information which has been received from the at least one additional processor, assembles the information received from the at least one additional processor into a packet and transmits the packet to the RF information transmission network. The RF information transmission network comprises a switch which receives the packet from the receiving interface switch and disassembles the packet into information from the plurality of processors. The RF information transmission network transmits the disassembled information including the identification number of the RF receiver transferring the information to the destination processor to a switch in the RF information transmission network storing a file identified by the identification number and any destination of the RF receiver in the RF information transmission network to which the information and identification number is to be transmitted by the RF information transmission network and adds any destination of the RF receiver to the information and the RF information transmission network in response to any added destination transmits the information and identification number to the destination for RF broadcast to the RF receiver. The destination processor is within the electronic mail system containing the destination processor. Alternatively, the system further includes another electronic mail system and the destination processor is within the another electronic mail system.

BRIEF DESCRIPTION OF DRAWINGS

FIG. **1** illustrates a prior art electronic mail system.

FIG. **2** illustrates a prior art paging system used by the present invention.

FIG. **3** illustrates a memory map of the local switch of the prior art paging system of FIG. **2**.

FIG. **4** illustrates a memory map of a lata switch of the prior art paging system of FIG. **2**.

FIG. **5** illustrates a memory map of a hub switch of the prior art paging system of FIG. **2**.

FIG. **6** illustrates a message format utilized by the prior art paging system of FIG. **2**.

FIG. **7** illustrates a prior art connection between a receiver in the paging system of FIG. **2** and a printer.

FIG. **8** illustrates a block diagram of an electronic mail system in accordance with the present invention.

FIG. **9** illustrates a block diagram of the connection of a plurality of electronic mail systems through a plurality of interface switches to an input port of an RF information transmission network utilized by the present invention.

FIG. **10** illustrates a block diagram of the transmission of information originating from a plurality of electronic mail systems to a RF information transmission network to a plurality of destination processors and originating processors within a plurality of electronic mail systems in accordance with the present invention.

FIG. **11** illustrates possible distributed functions for performing data processing steps necessary to transmit information from an originating processor to a destination processor using RF transmission in accordance with the present invention.

FIG. **12** is a block diagram of an interface switch in accordance with the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

FIGS. **8–10** illustrate a block diagram of an electronic mail system **100** which has been integrated with an RF information transmission network **302** for transmitting information from an originating processor within the electronic mail system to a destination processor within the electronic mail system utilizing RF communications in accordance with the present invention. Like reference numerals identify like parts in FIGS. **1–10** and **12**. The integrated system **100** differs from the prior art of FIGS. **1–7** in that the originating processor, which may be any of the processors within computing systems #**1**-#N is provided the option of transmitting electronic mail (information) to at least one destination processor

which may be any processor A–N within the processing systems #1-#N by means of an RF information transmission network **302** as described below. It should be understood that the present invention is not limited to the block diagram form of FIGS. **8–10** and **12**. Additionally, the communications between the originating processors, gateway switches **14** and destination processors may be through either a public or private switch telephone network **314** and are not limited to any type of telephone system interconnection. The RF information transmission network **302** functions to transmit the information which originated from one of the originating processor A–N within any of the computing systems #1-#N to the destination processor A–N within any of the computing systems #1-#N by an RF transmission to an RF receiver **119**. The RF receiver **119** is connected to the destination processor with the same connections as illustrated in the prior art of FIG. **7**.* Upon connection, the receiver **119** relays the information from the RF receiver to the destination processor. An important aspect of the present invention is that reception and review of electronic mail can be performed without connection of the RF receiver **119** to the destination processor A–N which permits the receiver to function as a mobile electronic mail receiver. As a result, the user may move from the site of the destination processor A–N either within an office or other location or during travel while receiving electronic mail which was not possible with the prior art. Furthermore, the connection of the RF receiver **119** to the destination processor automatically transfers the electronic mail stored within the memory of the RF receiver to the destination processor without manual keyboarding. A computer program for controlling the transfer of information from the receiver **119** to a SAFARI TM laptop computer of AT&T Corporation is contained within the attached Appendix at pages **1–9**. This program automatically provides transfer of the stored electronic mail stored within the memory of the

* When the RF receiver **119** is connected to the SAFARI TM computer, The connection is powered by the SAFARI computer. RF receiver **119** into the destination processor A–N where it is accessible to application programs within the destination processor. As a result, the deficiencies of the prior art in requiring substantial expense consequent from the making of telephone calls, substantial labor resultant from the lost time of persons making telephone calls and the inability to deliver electronic mail messages and the more difficult problem of delivering electronic mail messages to portable processors is overcome. Moreover, as is explained in detail below in conjunction with FIG. **11**, the initiation of an information transmission from an originating processor A–N to a destination processor A–N using an RF transmission by the RF information transmission network **302** to an individual RF receiver has many different options which are user friendly. The initiation of the transmission of information from an originating processor A–N to a destination processor A–N using the RF transmissions of the RF information transmission network **302** only requires the identification of an address of the RF receiver, which preferably is the identification number of the receiver **119** in the RF information transmission network and the designation of an address of an interface switch in the form of an address such a "TF MOBOX" which connects the electronic mail system to the RF information transmission network as described below in conjunction with FIGS. **9** and **10**. The initiator of an electronic mail message, in the most user friendly form of the invention, is only required to input into the originating processor A–N an identification of the destination processor A–N which typically is in the form of a name such as "John Doe". The distributed intelligence of the system implementing the present invention, which may be located in any one of the originating processors A–N, gateway switch **14** or interface switch **304** or distributed therebetween as described below with reference to FIG. **11**, may be used to add the necessary address of the interface switch connecting the electronic mail system 1-N to the RF information transmission network **302** and the identification of the RF receiver **119** in the RF information transmission network from the inputting of only an identification of the destination processor A–N. The addition of the identification number of the RF receiver **119** and the address of the interface switch may be implemented by the originating processor A–N of one of the computing systems #1-#N, a gateway switch **14** or an interface switch **304** as described below with reference to FIG. **9**.

FIG. **9** illustrates a block diagram of the connection between a plurality of gateway switches with mailboxes **14** in different electronic mail systems to the RF information transmission network **302**. It should be understood that multiple gateway switches with mailboxes **14** from a single electronic mail system 1-N may be connected to each interface switch **304** instead of the connection of a single gateway switch with mailbox to a single interface switch as illustrated. A plurality of interface switches **304** connect information transmitted from at least one electronic mail system as illustrated in FIG. **8**. Optionally, a plurality of electronic mail systems 1-N each as illustrated in FIG. **8** are connected to a data input port of the RF information transmission system which is preferably hub switch **116** of the prior art paging network described above with reference to FIGS. **2–6**. The dotted line communication paths **306** illustrate optional information transmissions in which information from a plurality of different electronic mail systems is concentrated at a single interface switch **304**. The dotted line communication paths **307** illustrate connections to additional gateway switches with mailboxes **14** within electronic mail systems 1-N.

The function of the interface switches **304** is twofold. In the first place, the interface switches **304** function as a security check to determine that information transmissions originating from a gateway switch with mailbox **14** represent transmissions which should be coupled to a hub switch **116** of the RF information transmission network **302**. The security check is performed by the interface switch **304** comparing the identification number of the RF receiver **119** which has been added by either an originating processor A–N or a gateway switch with mailboxes **14** with permissible identification numbers or the interface switch performing the addition of the identification number. The interface switch **304** also removes information added by the electronic mail system 1-N to the information originated by the originating processor A–N from the stored information received from one of the gateway switches **14** and adds information used by the RF information transmission network **302** during transmission of the information originated at the originating processor to a RF receiver **119** in the RF information transmission network **302** which receives the information and transfers it to the destination processor A–N. Additionally, the interface switch **304** encodes data, which is required to format the display of the CRT of the destination processor for the electronic mail system to which the destination processor is connected, in the form of a character or characters which are decoded by either the RF receiver **119** or the destination processor A–N and added in decoded form back to the information which is processed by the destination processor with a format of the electronic mail system to which the destination processor A–N is connected.

The interface switches **304** function to store information which has been stored by at least one gateway switch **114** that is received from a plurality of originating processors, assemble the information from a plurality of originating processors into a packet preferably having the format of that described above with reference to the prior art in FIG. **6** and transmit the packet to the hub switch **116** within the RF information transmission network **302**. While the invention is not limited to the transmission of the packets from the interface switch **304** to the hub switch **116** of the RF information transmission system **302**, the hub switch is the preferable node in the RF information transmission network to

which communications from the gateway switches **14** should be transmitted as a consequence of it having jurisdiction over both lata switches **114** and the local switches **112** in the RF information transmission network which results in lesser network overhead.

The hub switch **116** receives the packet from the receiving interface switch **304** and disassembles the packet into information from the plurality of originating processors either within a single electronic mail system such as system **1** or from a plurality of electronic mail systems, such as systems 1-N, or from outside of any electronic mail system from at least one additional processor **312** which is connected directly to interface switch **304** to originate information to be transmitted to a destination processor A–N in an electronic mail system as described below. The RF information transmission network **302** transmits the disassembled information from the hub switch **116** including the identification number of the RF receiver **119** transferring information to the destination processor A–N to a local switch **112** storing the file **154** identified by the identification number and any destination **178** of the RF receiver in the RF information transmission network to which the information and identification number is to be transmitted by the RF information transmission network and adds any destination of the RF receiver to the information in accordance with the prior art system described above with reference to FIGS. **2–6**. The RF information transmission network in response to any added destination transmits the information and identification number to the destination in accordance with the prior art system described above with reference to FIGS. **2–6** for RF broadcast to the RF receiver **119** for transfer to the destination processor A–N.

The information is transmitted to a receiving interface switch **304** from one or more gateway switches **14** by one or more electronic mail systems 1-N in response to an address of the receiving interface switch which has been added to the information originated by the originating processor by either the originating processor or gateway switch. The information is transmitted from the receiving interface switch **304** to the RF information transmission network with an address of the destination processor, such as a name of a user of the destination processor A–N, to receive the information which has been added by either the originating processor A–N, a gateway switch **14** or the receiving interface switch **304**.

Various options exist for the adding of the address of the receiving interface switch and the address of the destination processor. Preferably, the address of the receiving interface switch is a code word, such as "TF-MOBOX" which is recognized throughout the electronic mail system when appended to information as directing the information to be transmitted to the interface switch **304**. The address of the destination processor is preferably the identification number of the RF receiver **119** within the RF information transmission network **302**. The address of the receiving interface switch may be added to the information originated by the originating processor, by a gateway switch **14** or by the originating processor A–N. The address of the receiving interface switch **304** may be added to the information by matching an identification of the destination processor A–N which may be the name of the individual utilizing the processor or some other information and adds an address of an interface switch such as the aforementioned "TF-MOBOX" stored with the matched identification of the destination processor to the information as the address of the receiving interface switch. Alternatively, the originating processor may be used to add the address of the receiving interface switch **14** by an inputting of the address of the receiving interface switch (TF-MOBOX) along with an identification of the destination processor A–N (name of recipient using the processor). The originating processor A–N may also add the address of the receiving interface switch **304** by matching an identification of the destination processor (name of the user of the processor) with a stored identification of a destination processor and adding an address of the interface switch (TF-MOBOX) stored with the matched identification of the destination processor to the information as the address of the receiving interface switch. The identification number may be added to the information originated by the originating processor or, alternatively, may be added by the originating processor by matching an identification of the destination processor (the name of the user of the processor) with a stored identification of a destination processor (the authorized user of the destination processor) and adding an identification number stored with the matched identification of the destination processor to the information as the identification number of the RF receiver **119**. Alternatively, the aforementioned matching process may be performed by either the gateway switch **14** or the interface switch **304**.

The at least one additional processor **312** originates information from outside of any electronic mail system. The processors **312** provide an address of at least one destination processor in an electronic mail system, such as the name of the user, to receive information transmitted by the RF information transmission system **302** or an identification number of the RF receiver **119** receiving information and transferring the information to the destination processor. The interface switch **304** which receives the information from each processor **312** adds information used by the RF information transmission network **302** during transmission of the information to the RF receiver **119** receiving the information in the same manner as described above with respect to the interface switch **304**.

The advantage of connecting the processors **312** directly to the interface switch **304** is that the processors **312** are only required to have a telephone modem and support programming to format information for RF transmission to a destination processor A–N within any one of one or more electronic mail systems 1-N. The processors **312** are not required to have the necessary electronic mail system software present in originating processors A–N or interconnections with an electronic mail system. As a result of the connection to the interface switch **304**, information originating from the additional processors **312** may be transmitted by RF transmission to a destination processor A–N within any one or a plurality of electronic mail systems with the user of the processor **312** or the interface switch **304** only having to supply an identification number of the receiver **119** to input information into the RF information transmission system **302** for RF transmission to a destination processor.

The difference between originating information by one of the additional processors **312** outside of any electronic mail system and originating information by one of the processors within one of the electronic mail systems is that the direct connection of the additional processor to the interface switch **304** eliminates the

requirement for the adding of an address of the interface switch **304** which is required by the electronic mail systems to forward the information to the interface switch where necessary formatting of the information to be compatible with the RF information transmission system is performed. The interface switch **304** packetizes information originating from the additional processors **312** in the same manner as described above with respect to information originating from within an electronic mail system. Information from within an electronic mail system and originating from additional processors **312** outside of the electronic mail system may be formatted into the same packets which are forwarded to the hub switch **116**. Additionally, an interface switch **304** may be connected only to the additional processors **312** to provide an interface only for processors outside of any electronic mail system to destination processors A–N within one or more electronic mail systems 1-N. The only information which is necessary to be inputted by the additional processors **312** is the address of the destination processor (user of the processor). The addition of the identification number of the receiver **119** may be added by matching of an identification of the destination processor with stored destination processors within the additional processor **312** or the interface switch **304** with an identification number of the receiver **119** stored with an identification of a destination processor A–N used as an identification of the destination processor upon a match having been made.

FIG. **11** summarizes electronic mail message entry methods for messages (information) originating from originating processors within an electronic mail system. The first entry method adds the address of the interface switch **304** and the destination processor preferably in the form of a user's name; the gateway switch **14** takes no action; and the interface switch **304** adds the identification number of the RF receiver **119**. The second entry method adds the address of the interface switch **304** and the identification number of the receiver **119**; the gateway switch **14** takes no action; and the interface switch **304** performs only the function of verifying that the identification number which was added by the originating processor is a valid identification number within the RF information transmission network **302**. In the third method, the originating processor adds the destination processor preferably in the form of the user's name; the gateway switch adds the destination of the interface switch **304**; and the interface switch **304** adds the identification of the receiver **119**. In the fourth method, the originating processor adds the destination processor preferably in the form of the user's name only; the gateway switch **14** adds an address of the interface switch **304** and the identification number of the receiver **119**; and the interface switch takes no action other than verification that the identification number of the receiver **119** added by the gateway switch **14** is valid. In the fifth method, the operator of the originating processor adds the destination processor, points to an icon displayed on a CRT associated with the originating processor and the originating processor adds the address of the interface switch **304**; the gateway switch **14** adds the identification number of the receiver **119** and the interface switch **304** takes no action other than verification. In the sixth method, the operator of the originating processor adds the destination processor, the user of the originating processor points to an icon displayed by a CRT associated with the originating processor which causes the addition of the address of the interface switch **304**; the gateway switch takes no action and the interface switch **304** adds the identification of the receiver **119**. In the seventh method, the operator of the originating processor adds the destination processor, the user points to an icon displayed on a CRT associated with the originating processor causing the addition of the address of the interface switch **304** and the receiver identification number by comparing an identification of the destination processor, such as user name of the destination processor, to an identification of destination processors with identification numbers or RF receivers **119** which relay information to the destination processor; the gateway switch **14** takes no action; and the interface switch **304** takes no action.

FIG. **12** illustrates a block diagram of an interface switch **304** in accordance with the present invention. The interface switch **304** has a main CPU **400** to which is connected a floppy drive **402** and a hard drive **404** for providing memory storage for use by the CPU in executing the various functions of the interface switch as described above. The program on pages **10–14** of the Appendix implements the function of the interface switch **304** in a 3B2 computer which interfaces with the Telefind Corporation data transmission network described in the above-referenced patents and the AT&T Corporation electronic mail system. A diagnostic and maintenance port **406** is connected to the CPU in accordance with standard practice. A main bus **408** is coupled to a plurality of serial ports **410** which are connected in series with a multispeed modem **412** which is connected to one of the additional processors **312** as discussed above with reference to FIG. **9**, to at least one gateway switch with mailboxes **14** in at least one electronic mail system and to a plurality of network ports which are connected to a plurality of X.25 modems **414** which are connected in series with a network port **416** which is connected to hub switch **116** of FIG. **9**. A module bay controller **418** controls the bus **408** in accordance with standard practice. Alternatively, if the interface switch is not connected to a gateway switch with mailboxes **14**, the interface switch functions only as a general purpose collector switch for the additional processors **312**.

While the invention has been described in terms of its preferred embodiments, it should be understood that numerous modifications may be made thereto without departing from the spirit and scope as defined in the appended claims. For example, while the invention has been described in terms of utilizing a preferred RF information transmission network, it should be understood that the invention is equally applicable to other forms of RF transmission systems for broadcasting information originating from an originating processor within an electronic mail system or from an additional processor outside of any electronic mail system to a destination processor connected to an electronic mail system. It is intended that all such modifications fall within the scope of the appended claims.

```
#define ATT_EMAIL_FILE          "TFMOBOX.TMP"
#define DELIMITER               "End of Telefind Network Message\n"
```

```
#include <string.h>
#include <time.h>
#include <stdio.h>
#include <dos.h>
#include "safari.h"

void main(void)
{
        FILE *infile,*outfile;
        char buffer[81],chr,timestr[6],datestr[9];
        char msg_num[4];
        int msg_num_opt = 0;
        char *ptr;
        int x,day,month,line=1,attmail=0;
        time_t t;

        if ((infile = fopen(ATT_EMAIL_FILE,"rt")) == NULL)
        {
                printf("%s does not exist\n",ATT_EMAIL_FILE);
                exit(0);
        }
        if ((outfile = fopen("tfmobox.$$$","wt")) == NULL)
        {
                printf("Can't open TFMOBOX.$$$\n");
                exit(0);
        }

        for(;;)
        {
                /*      get characters from .tmp file   */
                x = 0;
                do
                {
                        chr = fgetc(infile);
                        if (feof(infile))
                        {
                                fclose(infile);
                                fclose(outfile);
                                exit(0);
                        }
                        buffer[x++] = chr;
                }
                /*          until end of line          */
                while (chr != '\n' && x != 80);

                buffer[x] = '\0';       /*     terminate it     */

                if (line == 1)
                {
                        ptr = strchr(buffer,')');
                        if (ptr-buffer == 2)    /*   was 3rd character  */
                        {
                                sscanf(buffer,"%[^)]",msg_num);
                                msg_num_opt = 1;
                                ptr++;
                        }
                        else
                                ptr = buffer;

                        if (*ptr == ':' && *(ptr+1) == 'D')
                                attmail = 1;
                }
```

```
        if (attmail)
        {
                switch(line)
                {
                        case 1:
                                /*      datestr = mm/dd, timestr = hh:mm      */

                                sscanf(datestr,"%d/%d",&month,&day);          */
                                /*      get year from pc      */

                                t = time(NULL);
                                fprintf(outfile,"Date: %s",ctime(&t));
                                break;
                        case 2:
                                fprintf(outfile,"From: %s",buffer);
                                break;
                        case 3:
                                fprintf(outfile,"Subject: %s",buffer);
                                fprintf(outfile,"To: <Name here>\n");
                                if (msg_num_opt)
                                        fprintf(outfile,"Message #%s\n",msg_num);
                                break;
                        default:
                                fprintf(outfile,"%s",buffer);
                                break;
                }
        }
        else
        {
                if (line == 1)
                {
                        t = time(NULL);
                        fprintf(outfile,"Date: %s",ctime(&t));
                        fprintf(outfile,"From: tfmobox\n");
                        fprintf(outfile,"Subject: Telefind Network Message\n");
                        fprintf(outfile,"To: <Name here>\n");
                        if (msg_num_opt)
                        {
                                fprintf(outfile,"Message #%s\n",msg_num);
                                fprintf(outfile,"%s",buffer+3);
                        }
                        else
                                fprintf(outfile,"%s",buffer);
                }
                else
                        fprintf(outfile,"%s",buffer);
        }

        if (strcmp(buffer,DELIMITER) == 0)
        {
                msg_num_opt = line = attmail = 0;
        }

        line ++;
    }
}
/*

        Author:                 MICHAEL P. PONSCHKE, SR.
                                03/13/91

        Program:                SAFARI3.C
```

```
        Purpose:                TO EXTRACT MESSAGES FROM A TELEFIND PAGER
                                VIA IN RS-232 PORT ON A PC

        Compiler:               TURBO C++ 1.0
        Memory Model:           SMALL
*/

#include <dos.h>
#include <stdio.h>
#include <conio.h>
#include <string.h>
#include <stdlib.h>
#include "safari.h"

/*              CONSTANTS               */


#define DTR_HI                  0x01
#define DTR_LO                  0xfe
#define RTS_HI                  0x02
#define RTS_LO                  0xfd
#define DSR_HI                  0x20
#define RING_IN                 0x40
#define CD_HI                   0x80
#define FIVE_TICK               5
#define FIVE_SEC                96
#define TWELVE_SEC              220
#define LOG_FILE                "LOG"
#define INTRO_STRING            "Please standby, retrieving messages ..."

/*    FUNCTION PROTOTYPES       */

int beep(void);
void busyoff(void);
void busyon(void);
void disoff(void);
void dison(void);
int link(void);
void print_message(void);
int rxdata(void);
int strobe(void);
int strobe_data(void);
unsigned ticks(void);
int timeout(unsigned start, int delay);

/*   VARIABLE DECLARATIONS      */

char pager_buffer[511];
int com_base,control_reg,status_reg,log_flag;
FILE *log_file;

void main(int num_arg, char **args)
{
        unsigned start;
        int restart,x;

        com_base = 0x3f8;       /*    use com 1 unless command line denotes otherwise   */

        /*      get command line arguments      */
        /*      all command line arguments begin with a single '-' and
                must be seperated by a single space between each other
                and the program name
```

```
-1      Use COM port 1
-2      Use COM port 2
-F      Log all activity to a file named LOG          */

if (num_arg > 1)
{
        for (x=1; x<num_arg; x++)
        {
                if (strcmp(args[x],"-1") == 0)
                        com_base = 0x3f8;
                if (strcmp(args[x],"-2") == 0)
                        com_base = 0x2f8;
                if (strcmp(args[x],"-F") == 0)
                        log_flag = 1;
        }
}

if (log_flag)
        if ((log_file = fopen(LOG_FILE,"at")) == NULL)
                printf("Unable to open LOG\n");

control_reg = com_base + 4;
status_reg = com_base + 6;

clrscr();

if (link() == 0)        /*    is pager attached ?      */
        {
        printf("Please attach Message Receiver \n");
        exit(0);
        }

busyon();               /*  start busy at logic high   */

if (log_flag)
        fprintf(log_file,"Initiating process \n");
printf("%s\n",INTRO_STRING);
dison();        /* push display button  */
sleep(2);
do
{
        start = ticks();
        restart = 0;
        do
        {
                if (beep())
                {
                        print_message();
                        restart = 1;
                        start -= TWELVE_SEC;
                        break;
                }
        }
        /* hold display button for 12 seconds   */
        while(! timeout(start,TWELVE_SEC));
}
while(restart);

disoff();       /* release the display button   */
if (log_flag)
{
        fprintf(log_file,"Process Complete \n");
```

```
                fclose(log_file);
        }

}

/*              pager beep              */
int beep(void)
{

/*      accesses the RI line via the Status Register
        which is activated when the pager beeps         */

        unsigned start;

        start = ticks();
        while ( ! timeout(start,FIVE_TICK))
        {
                if ((inportb(status_reg) & RING_IN) == 0 )
                        return(1);
        }
        return(0);
}

/*      busyon & busyoff toggle the DTR line via the
        Control Register to strobe in data from the pager                       */

void busyoff(void)
{
        outportb(control_reg,inportb(control_reg) | DTR_HI);
}

void busyon(void)
{
        outportb(control_reg,inportb(control_reg) & DTR_LO);
}

/*      dison & disoff toggle the RTS line via the Control Register
        to simulate the pressing of the display button on the pager             */


void dison(void)
{
        outportb(control_reg,inportb(control_reg) | RTS_HI);
}

void disoff(void)
{
        outportb(control_reg,inportb(control_reg) & RTS_LO);
}

int link(void)
{

/*      accesses the CD line via the Status Register
        which is logic high when pager is connected     */

        if ((inportb(status_reg) & CD_HI) == 0)
                return(0);
        return(1);
}

void print_message(void)
```

```
{
        FILE *file;
      - unsigned start;
        int x,y=0,z=0,chr,bit;
busyoff();      /*      ready to accept pager data      */

/*              read until end code received            */
while (chr != 3)
{
        chr = 0;
        start = ticks();

        /*      wait for start bit      */

        do
        {
                bit = strobe();
                if (bit == 0)
                        break;
        }
        while (!timeout(start,FIVE_SEC));

        if (bit)
        {
                if (log_flag)
                        fprintf(log_file,"Transmission Error, recheck connection\n");
                disoff();
                exit(0);
        }

        /*              strobe out 8 bit data           */

        for (x=1; x<9; x++)
        {
                chr <<= 1;
                chr += bit = strobe_data();
        }

        /*              clear out stop bits             */
        for (x=1;x<3;x++)
        {
                strobe_data();
        }

        /*   extract start and end codes from message

             pager signon       02, 1B, 0D, 33
             pager signoff      03                      */

        if ((y > 3) && (chr != 3))
        {
                /* pager characters 96 and 97 are converted to
                   0xFA and 0xFB to display on pager            */

                if (chr == 0xfa)        /*    convert to CR     */
                        chr = '\n';
                if (chr == 0xfb)        /*    convert to TAB    */
                        chr = 0x09;

                pager_buffer[z] = chr;
                z ++;
        }
```

```
        y ++;
}

pager_buffer[z] = '\0';                 /*    null terminate    */

busyon();   /*        finished receiving data          */
        if (log_flag)
                fprintf(log_file,"%s\n",pager_buffer);

        if ((file = fopen(ATT_EMAIL_FILE, "at")) == NULL)
                fprintf(log_file,"Unable to open TFMOBOX.TMP\n");
        else
        {
                fprintf(file,"%s\n",pager_buffer);
                fprintf(file,"%s",DELIMITER);
                fclose(file);
        }

        start = ticks();
        while(!timeout(start,FIVE_SEC))
        {
        /*     wait for erase beep      */
                if (beep()) break;
        }
        sleep(1);       /*      wait one more second    */
}

int rxdata(void)
{

/*      accesses the DSR line via the Status Register
        which returns the bits value                    */

        if (inportb(status_reg) & DSR_HI)
                return(0);
        return(1);
}

int strobe(void)
{
        int bit;

        busyon();
        delay(1);
        busyoff();
        delay(4);
        bit = rxdata();
        return(bit);
}

int strobe_data(void)
{
        int bit;

        busyon();
        delay(2);
        bit = rxdata();
        busyoff();
        delay(1);
        return(bit);
}
```

```
unsigned ticks(void)
{
        /*      returns timer ticks (approx. 18.2/sec)
                using only lower registers              */

        union REGS in,out;

        in.x.ax = 0x0;
        int86(0x1a,&in,&out);
        return(out.x.dx);
}

int timeout(unsigned start, int delay)
{
        /*      used for timing events of up to approx. 1 hour.
                used in conjunction w/ticks()                   */

        unsigned current;

        current = ticks();
        if (start <= current && (start + delay) < current)
                return(1);
        if (start > current && (start - 65535 + delay) < current)
                return(1);
        return(0);
}

        /* mark the end of the command line you built,so you can add ending
           delimiter */
        sys_command[i] = NULL;
        /* add the ending quote for the users message so shell wont
           interepert special characters */
        strcat(sys_command, "\'");
        /* execute command you built */
        system(sys_command);

        printf("sending message: %s\n", sys_command);

      }
      else {
        if(strlen(mesg) == 0 ) {
           return(0);
        }
        /* print error for invalid message length */
        printf("telemail error: invalid message length: %s\n", mesg);
        return(0);
      }

      return(i);
}

/*************************************************************************
*
*   function: getline(hold-buffer, input-file-pointer)
*   arguments: pointer to buffer where line read will be heald,
*              file pointer to input file
*   description: reads 1 line of text from the input line and stores the
*                line read into the buffer passed.
*   returns: -1 if EOF or number of characters read in
*
*************************************************************************/
getline(buff, fp)
char *buff;
FILE *fp;
{
   int ch, cnt;

   /* keep on reading characetrs from file so long as end of file not
      reached or char is the end of line */
```

```
  for(cnt = 0; ((ch = fgetc(fp)) != EOF) && ch != '\n'; cnt++) {
      /* MOD BY OT 11/29/90 convert tab to space */
      /* convert tabs to single space */
      if(ch == 9) {
         ch = ' ';
      }
      /* MOD BY OT 11/29/90 dont allow control char */
      /* only load in ascii characters */
      if(isprint(ch) != 0) {
         buff[cnt] =  ch;
      }
      else {
            /* turn control characters to spaces */
            buff[cnt] = ' ';
      }
  }
  /* mark the end of the buffer you built */
  buff[cnt] = '\0';
/*************************************************************************
*
*   function: send_mesg(message-pointer)
*   arguments: pointer to text message(capcode,text) to be sent
*   description: takes passed message text makes sure the first 8 positions
*                are numeric(capcode). it builds and executes the network
*                send command(netsend.sh) to sedn the message passed.
*   returns: 0 if not sent otherwise the number of characters sent out
*
*************************************************************************/
int send_mesg(mesg)
char *mesg;
{
   char sys_command[700];
   int i;
   int cnt;
   char *mesg_ptr;

   /* leftt justify the message passed to remove leading spaces */
   strlpast(mesg, 512);
   /* trim off trailing blank spaces from the message */
   strtrim(mesg);

   /* make sure you have a capcode at least */
   if(strlen(mesg) > 8) {

      /* start to build the command to be executed to send message retreieved
         from the mail box */
      strcpy(sys_command, "netsend.sh ");

      /* loop while still more characters in the message */
      for(mesg_ptr = mesg, i = 11; *mesg_ptr != NULL; i++, mesg_ptr++) {

           /* make sure the first 8 positions of the message are numeric */
           if((i < 19) && (*mesg_ptr < '0' || *mesg_ptr > '9')) {
               printf("telemail error: invalid capcode: %s\n", mesg);
               return 0;
           }

           /* is the user didsnt seperate capcode & message then insert a
               space into the command */
           if(i == 19 && *mesg_ptr != ' ') {
              sys_command[19] = ' ';
              i = 20;
           }

           /* enclose the users message with ' so shell wont interpet
              special characters */
           if(i == 20) {
              sys_command[20] = '\'';
              i = 21;
           }

          /* put the character from the message onto to the
             command to be executed */
```

```
    sys_command[i] = *mesg_ptr;
}
  /* since your just starting clear the message area */
  memset(mesg, NULL, MAXMSGLEN);

  /* keep on geting lines from the file until you reach end of file */
  while(getline(buff, fp) != -1) {

     /* every mail message start with the word "From " */
     if(strncmp(buff, "From ", 5) == 0) {
        /* set flag telling you are currently going thru mail header
           so you dont add it to the message */
        in_header = 1;
        /* call routine to the last message if any exists */
        send_mesg(mesg);
        continue;
     }

     /* a mail header end with the following string */
     if(strncmp(buff, "Content-Length:", 15) == 0) {
        /* turn off flag so you know you are no longer in mail
           message header */
        in_header = 0;
        /* clear the old message since this is a new one */
        memset(mesg, NULL, MAXMSGLEN);
        continue;
     }

     /* if the line you are now reading in not part of the mail header
        add it to the message */
     if(in_header == 0) {
        strljust(buff, 512);
        strtrim(buff);
        /* make sure you dont add more than the message length */
        if( (strlen(buff) + strlen(mesg)) < MAXMSGLEN) {
           strcat(mesg, " ");
           strcat(mesg, buff);
        }
     }

  } /* end of read line while */

  /* send the last message in the file */
  send_mesg(mesg);
```

We claim:

1. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in an electronic mail system comprising:

at least one gateway switch, the at least one gateway switch storing originated information received from one of the plurality of originating processors prior to transmission of the originated information to the at least one of the plurality of the destination processors;

a RF information transmission network for transmitting the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors;

at least one interface switch, the at least one interface switch being coupled to at least one gateway switch and to the RF information transmission network and transmitting the originated information received from the at least one gateway switch to the RF information transmission network; and

at least one additional processor with each additional processor being coupled to at least one interface switch, one of the at least one additional processor originating other originated information from outside any electronic mail system for transmission to the at least one of the plurality of destination processors by the RF information transmission network and an address of the at least one of the plurality of destination processors to receive the other originated information transmitted by the RF information transmission network or an identification number of the at least one RF receiver receiving the other originated information for transmission to the at least one of the plurality of the destination processors and transferring the other originated information to the at least one of the plurality of the destination processors; and wherein

the interface switch receiving the other originated information originating from the one additional processor and the address or identification number adds RF network information used by the RF information transmission network during transmission of the other originated information to the at least one RF receiver receiving the other originated information to the other originated informa-

tion: and

each electronic mail system in the system transmits other information from one of its plurality of originating processors through a wireline to at least one of its plurality of destination processors without transmission using the RF information transmission network.

2. A system in accordance with claim 1 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the one additional processor originating the other originated information.

3. A system in accordance with claim 2 wherein:

the one additional processor adds the identification number of the at least one RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of the at least one of the plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of the plurality of destination processors to the other originated information.

4. A system in accordance with claim 1 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the additional processor by the interface switch receiving the other originated information and the address or the identification number from the one additional processor.

5. A system in accordance with claim 4 wherein:

the interface switch receiving the other originated information adds the identification number of the at least one RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of at least one of the plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of the plurality of destination processors to the other originated information.

6. A system in accordance with claim 1 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

7. A system in accordance with claim 6 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

8. A system in accordance with claim 2 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

9. A system in accordance with claim 8 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

10. A system in accordance with claim 3 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

11. A system in accordance with claim 10 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch re-

ceiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least once RF receiver.

12. A system in accordance with claim 4 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

13. A system in accordance with claim 12 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

14. A system in accordance with claim 5 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

15. A system in accordance with claim 14 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

16. A system in accordance with claim 1 wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

17. A system in accordance with claim 1 further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

18. A system in accordance with claim 2 wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

19. A system in accordance with claim 2 further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

20. A system in accordance with claim 3 wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

21. A system in accordance with claim 3 further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

22. A system in accordance with claim 4 wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

23. A system in accordance with claim 4 further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

24. A system in accordance with claim **5** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

25. A system in accordance with claim **5** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

26. A system in accordance with claim **6** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

27. A system in accordance with claim **6** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

28. A system in accordance with claim **7** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

29. A system in accordance with claim **7** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

30. A system in accordance with claim **8** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

31. A system in accordance with claim **8** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

32. A system in accordance with claim **9** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

33. A system in accordance with claim **9** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

34. A system in accordance with claim **10** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

35. A system in accordance with claim **10** further comprising:

another electronic mail system; and wherein

the at least one of the .plurality of destination processors is within the another electronic mail system.

36. A system in accordance with claim **11** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

37. A system in accordance with claim **11** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

38. A system in accordance with claim **12** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

39. A system in accordance with claim **12** further comprising:

another electronic mail system; and wherein the at least one of the plurality of destination processors is within the another electronic mail system.

40. A system in accordance with claim **13** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

41. A system in accordance with claim **13** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

42. A system in accordance with claim **14** wherein:

the at least one Of the plurality Of destination processors is within the electronic mail system containing the originating processors.

43. A system in accordance with claim **14** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

44. A system in accordance with claim **15** wherein:

the at least one of the plurality of destination processors is within the electronic mail system containing the originating processors.

45. A system in accordance with claim **15** further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

46. A system for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in an electronic mail system comprising:

a RF information transmission network for transmitting the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors;

at least one interface switch, the at least one interface switch being coupled to the electronic mail system containing the plurality of the originating processors and to the RF information transmission network and transmitting the originated information received from the electronic mail system containing the plurality of originating processors to the RF information transmission network; and

at least one additional processor with each additional processor being coupled to at least one interface switch, one of the at least one additional processor originating other originated information from outside any electronic mail system for transmission to the at least one of the plurality of destination processors by the RF information transmission network and an address of the at least one of the plurality of destination processors to receive the other originated information transmitted by the RF information transmission network or an identification number of the at least one RF receiver receiving the other originated information for transmission to the at least one of the plurality of destination processors and transferring the other originated information to the at least one of the plurality of destination processors; and wherein

the interface switch receiving the other originated information originating from the one additional

processor and the address or identification number adds RF network information used by the RF information transmission network during transmission of the other originated information to the at least one RF receiver receiving the other originated information to the other originated information; and

each electronic mail system in the system transmits other information from one of its plurality of originating processors through a wireline to at least one of its plurality of destination processors without transmission using the RF information transmission network.

47. A system in accordance with claim 46 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the one additional processor originating the other originated information.

48. A system in accordance with claim 47 wherein:

the one additional processor adds the identification number of the at least ode RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of the at least one of the plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of a plurality of destination processors to the other originated information.

49. A system in accordance with claim 46 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the additional processor by the interface switch receiving the other originated information and the address or the identification number from the one additional processor.

50. A system in accordance with claim 49 wherein:

the interface switch receiving the other originated information adds the identification number of the at least one RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of at least one of the plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of the plurality of destination processors to the other originated information.

51. A system in accordance with claim 46 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originated processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

52. A system in accordance with claim 51 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information and wherein

the RF information transmission network transmits the disassembled other originated information and the identification number information to the destination from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

53. A system in accordance with claim 46 wherein:

the destination processor is within the electronic mail system containing the originating processors.

54. A system in accordance with claim 46 further comprising:

another electronic mail system; and wherein

the at least one of the plurality of destination processors is within the another electronic mail system.

55. A method for transmitting originated information from one of a plurality of originating processors in an electronic mail system to at least one of a plurality of destination processors in an electronic mail system comprising:

transmitting the originated information from the electronic mail system containing the plurality of originating processors to an interface switch;

transmitting the originated information from the interface switch to a RF information transmission network which transmits the originated information to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors;

originating at an additional processor from outside any electronic mail system other originated information for transmission to the at least one of the plurality of destination processors in the electronic mail system by the RF information transmission network and an address of the at least one of the plurality of destination processors to receive the other originated information transmitted by the RF information transmission network or an identification number of the at least one RF receiver receiving the other originated information for transmission to the at least one of the plurality of destination processors and transmitting the other originated information and address or identification number to the interface switch; and

transmitting the other originated information from the interface switch to the RF information transmission network which transmits the other originated information to at least one RF receiver which transfers the other originated information to the at least one of the plurality of destination processors; and wherein

the interface switch in response to receiving the other originated information and the address or identification number adds RF network information used by the RF information transmission network dur-

ing transmission of the other originated information to the at least one RF receiver receiving the other originated information; and

each electronic mail system in the system transmits other information from one of its plurality of originating processors through a wireline to at least one of its plurality of destination processors without transmission using the RF information transmission network.

56. A method in accordance with claim 55 wherein:

the originated information is transmitted from an electronic mail system containing the plurality of originating processors through a gateway switch to the interface switch.

57. A method in accordance with claim 55 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the one additional processor originating the other originated information.

58. A method in accordance with claim 56 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the one additional processor originating the other originated information.

59. A method in accordance with claim 55 wherein:

the one additional processor adds the identification number of the at least one RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of the at least one of the plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of a plurality of destination processors to the other originated information.

60. A method in accordance with claim 56 wherein:

the one additional processor adds the identification number of the at least one RF receiver by matching an identification of the at least one of the plurality of destination processors inputted to the one additional processor with a stored identification of the at least one of a plurality of destination processors and adds an identification number of the at least one RF receiver stored with the matched identification of the at least one of a plurality of destination processors to the other originated information.

61. A method in accordance with claim 55 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the additional processor by the interface switch receiving the other originated information from the one additional processor.

62. A method in accordance with claim 56 wherein:

the identification number of the at least one RF receiver receiving the other originated information is added to the other originated information originated by the additional processor by the interface switch receiving the other originated information from the one additional processor.

63. A method in accordance with claim 55 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

64. A method in accordance with claim 63 further comprising:

a RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and the identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

65. A method in accordance with claim 56 wherein:

the interface switch receiving the other originated information stores the originated information which has been received from the plurality of originating processors and the other originated information, assembles the originated information received from the plurality of the originating processors and the other originated information into a packet and transmits the packet to the RF information transmission network.

66. A method in accordance with claim 65 wherein:

the RF information transmission network switch receiving the packet from the interface switch disassembles the packet into disassembled information including the other originated information; and

the RF information transmission network transmits the disassembled other originated information and the identification number from the RF information transmission network switch to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the other originated information and the identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the other originated information and the RF information transmission network in response to any added destination transmits the other originated information and the identification number to any added destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

67. A method in accordance with claim 55 further comprising:

the transmission of the other originated information is to the at least one destination processor within an electronic mail system different than an electronic mail system containing the plurality of originating processors.

68. A method in accordance with claim 55 wherein: the transmission of the other originated information is to the at least one destination processor within an electronic mail system containing the plurality of originating processors.

69. A method in accordance with claim 55 wherein: the at least one RF receiver receives the other originated information when the destination processor is turned off and transfers the other originated information to the at least one destination processor at a time subsequent to reception of the originated information by the at least one receiver when the destination processor is turned on.

70. A method in accordance with claim 69 wherein: the at least one RF receiver is portable.

71. A method in accordance with claim 69 wherein: the at least one RF receiver and the at least one destination processor in an electronic mail system are portable.

72. A method in accordance with claim 69 wherein: the transfer of the other originated information occurs after the at least one RF receiver is electrically connected to the at least one destination processor in an electronic mail system.

73. A method in accordance with claim 56 wherein: the at least one RF receiver receives the other originated information when the destination processor is turned off and transfers the other originated information to the at least one destination processor at a time subsequent to reception of the originated information by the at least one receiver when the destination processor is turned on.

74. A method in accordance with claim 73 wherein: the at least one RF receiver is portable.

75. A method in accordance with claim 73 wherein: the at least one RF receiver and the at least one destination processor are portable.

76. A method in accordance with claim 73 wherein: the transfer of the other originated information occurs after the at least one RF receiver is connected to the at least one destination processor in an electronic mail system.

77. A method in accordance with claim 55 wherein: the transfer occurs under control of a program stored by the at least one destination processor and makes the other originated information accessible to application programs stored within the at least one destination processor.

78. A method in accordance with claim 67 wherein: the transfer occurs under control of a program stored by the at least one destination processor and makes the other originated information accessible to application programs stored within the at least one destination processor.

79. A method in accordance with claim 55 further comprising:

transmitting the originated information from the one of plurality of originating processors to at least one of the destination processors without use of the RF information transmission network through a telephone network.

80. A method in accordance with claim 79 wherein: the transmission of the originated information through a telephone network is through either a public or private switch telephone network.

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